**CLAIMS:**

1. A process for the preparation of a radiation-sensitive silver halide emulsion comprised of high bromide cubical silver halide grains, the process comprising:

(a) providing in a stirred reaction vessel a dispersing medium and high bromide silver halide grain cores, the grain cores comprising at least 5 mole % of the final emulsion silver and the contents of the vessel being maintained at a temperature of at least about 65°C, and

(b) precipitating a high bromide silver halide shell which comprises at least 5 mole % of the final emulsion silver onto the grain cores by introducing at least a silver salt solution into the dispersing medium at a rate such that

(i) the normalized shell molar addition rate, $R_s$, is above $1.0 \times 10^{-3}$ $min^{-2}$, $R_s$ satisfying the formula:

$$R_s = \frac{M_s}{M_t \, t_s^2}$$

where $M_s$ is the number of moles of silver halides added to the reaction vessel during the formation of the shell, $t_s$ is the run time, in minutes, of the silver salt solution for the formation of the shell, and $M_t$ is total moles of silver halide in the reaction vessel at the end of the precipitation of the shell, and

(ii) when the contents of the reaction vessel are maintained at a temperature of from 65°C to 70°C, the surface area normalized instantaneous molar addition rate, $R_i$, is above (24T –1380) mol/min/$m^2$ during at least a portion of the shell growth, where T represents the temperature of the contents of the vessel in °C, and when the contents of the vessel are maintained at a temperature above 70°C, $R_i$ is above 300 mol/min/$m^2$, $R_i$ satisfying the formula:

$$R_i = \frac{Q_f C_f}{n S_c}$$

where $Q_f$ is the volumetric rate of addition, in liters/min, of silver salt solution to the reaction vessel, $C_f$ is the concentration, in moles/liter, of the silver salt solution, $S_c$ is the average surface area of an individual grain core already formed in the vessel, and n is the total number of grain cores in the vessel;

wherein a minor percentage of chloride ions, relative to bromide, is introduced into the reaction vessel prior to or concurrent with precipitation of the high bromide shell, and wherein the concentration of silver halide grains in the reaction vessel at the end of the precipitation of the shell is at least 0.5 mole/L.

2. The process according to claim 1, wherein in step (b) a halide salt solution is simultaneously introducing into the dispersing medium with the silver salt solution.

3. The process according to claim 1, wherein the concentration of silver halide grains in the reaction vessel at the end of the precipitation of the shell is at least 0.8 mole/L.

4. The process according to claim 1, wherein the concentration of silver halide grains in the reaction vessel at the end of the precipitation of the shell is at least 1.0 mole/L.

5. The process according to claim 1, wherein the grain cores provided in step (a) comprise at least 10 mole % of the final emulsion silver.

6. The process according to claim 5, wherein the grain cores provided in step (a) comprise from 10 to 50 mole % of the final emulsion silver.

7. The process according to claim 5, wherein the grain cores provided in step (a) comprise from 10 to 30 mole % of the final emulsion silver.

8. The process according to claim 1, wherein the silver halide shell precipitated during step (b) comprises at least 20 mole % of the final emulsion silver.

9. The process according to claim 1, wherein the silver halide shell precipitated during step (b) comprises greater than 50 mole % of the final emulsion silver.

10. The process according to claim 1, wherein the silver halide shell precipitated during step (b) comprises at least 60 mole % of the final emulsion silver.

11. The process according to claim 1, wherein the silver halide shell precipitated during step (b) comprises at least 70 mole % of the final emulsion silver.

12. The process according to claim 1, wherein the high bromide cubical silver halide grains contain at least 70 mole percent bromide, based on silver.

13. The process according to claim 1, wherein the high bromide cubical silver halide grains contain at least 90 mole percent bromide, based on silver.

14. The process according to claim 1, wherein the high bromide cubical silver halide gains comprise from 0.2 to 20 mole percent chloride, based on silver.

15. The process according to claim 1, wherein high bromide cubic silver halide grains are formed.

16. The process according to claim 1, wherein the high bromide cubical grains have an average equivalent spherical diameter of at least 0.5 micrometers and a grain size coefficient of variation of less than 20%.

17. The process according to claim 16, wherein the high bromide cubical grains have an average equivalent spherical diameter of at least 0.7 micrometers.

18. The process according to claim 1, wherein $R_i$ is above 300 mol/min/$m^2$ during at least a portion of the shell growth when the contents of the reaction vessel are maintained at a temperature of at least 65°C.

19. The process according to claim 1, wherein $R_i$ is above 350 mol/min/$m^2$ during at least a portion of the shell growth when the contents of the reaction vessel are maintained at a temperature of at least 65°C.